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1982

**Processing Cabbage Cultivar
Evaluation Trials**

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PROCESSING CABBAGE CULTIVAR EVALUATION TRIALS--1982

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The cabbage cultivar evaluation trials were conducted at the OARDC Vegetable Crops Research Branch near Fremont. The soil is a sandy loam. The plots received 600 lb/A broadcast 10-20-20 and 150 lb/A within-row at planting of 6-24-12 fertilizer; 1 lb/A boron and 4 lb/A of Diazinon pre-plant incorporated. Treflan at 0.75 lb/A was pre-plant incorporated for weed control.

The plots were field seeded on June 8 using a Planet-Jr. seeder. Rows were 30 ft. long on 30-in. centers. The rows were hand-thinned to give an 18-in. spacing. Each cultivar was replicated four times in the replicated trial.

Cultural care throughout the season was according to recommended procedures. No serious insect, disease or weed problems developed during the season. Monthly rainfall totals were:

June	4.73 in.
July	2.94 in.
August	1.35 in.
September	2.66 in.
October	2.29 in.

The plots were irrigated on July 30, 1 in.; August 11, 1/2 in.; and September 6, 1 in. When the majority of the heads reached maturity, the cultivars were evaluated for external color, uniformity of head size and maturity, plant size, head shape, plant uprightness, and wrapper-leaf cover. The numbers of bursted and rotted heads were recorded. The heads were harvested on October 5, counted and weighed. Four heads of each cultivar from each replicate were cut and the core length and polar and equatorial diameters recorded. The observational processing trial was harvested on October 5, with numbers and weight of heads recorded. Four heads of each cultivar from each replicate were cut, rated for internal tipburn and core length, equatorial and polar diameter recorded.

A sample of 5 or 6 heads from each cultivar was sent to the horticultural laboratories in Columbus for processing quality evaluation. The heads were quartered and a quarter of each shredded into a large container. This was then thoroughly mixed and a sample of 9 lbs. was placed into ceramic crocks with appropriate salt addition for 2.25% by weight, sealed and allowed to ferment. Additional observations on raw product quality were also made at the time of cutting the heads. Eight weeks later, the pH and total acids in the brine were measured.

Seed companies who supplied seed for these trials included: Joseph Harris Co., Inc., Rochester, NY; Northrup, King & Co., Minneapolis, MN; Ferry-Morse Seed Co., Mountain View CA; Moran Seeds, Inc., Salinas, CA; Seedway, Inc., Hall, NY; and Keystone Seed, Hollister, CA.

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Table 1. Yield and quality characteristics of cabbage cultivars from Processing Replicated Trial - 1982.

Cultivar	Source	Harvest Data		Measurement (in)			
		Tons/ acre	Lbs/ head	Core lgth.	Polar diam.	Equatorial diam.	Firm- ness*
Candor	Moran	55.1	9.98	4.11	7.80	9.19	1.19
Krautpacker	Seedway	50.5	9.54	2.73	7.79	8.30	1.62
Titan-90	Ferry-Morse	48.0	9.72	3.84	8.08	9.22	2.00
King Cole	Ferry-Morse	47.9	8.92	4.36	7.91	8.47	1.81
Grand Slam	Northrup King	47.3	9.30	2.97	7.19	9.26	2.00
Roundup	Ferry-Morse	46.6	8.68	4.18	7.55	8.59	1.31
NCX-9042	Moran	46.0	9.32	3.83	7.48	9.35	1.50
NCX-9046	Moran	45.6	8.26	3.28	8.12	9.30	1.94
Little Rock	Ferry-Morse	42.1	7.73	3.28	6.91	8.53	1.19
Rio Verde	Northrup King	39.8	8.56	3.16	6.64	9.00	1.00
Hanova	Seedway	36.5	6.54	3.17	7.16	7.80	1.00
Hitoma	Seedway	35.5	6.99	3.48	7.57	7.98	1.00
LSD .05		6.5	----	.60	.50	.69	.62

* Firmness rating of harvested heads: 1 = firm, 2 = medium, 3 = soft

Table 2. Quality characteristic ratings of cabbage cultivars from Processing Replicated Trial - 1982*

Cultivar	Plant Characteristics					
	External color	Uniformity	Plant size	Head shape	Plant uprightness	Leaf cover
Candler	1.7	1.2	1.2	1.7	1.7	2.0
Krautpfeiler	1.0	1.5	2.7	1.7	1.5	1.0
Titan-90	2.0	1.2	2.0	2.0	1.7	1.0
King Cole	1.7	1.7	2.0	2.0	2.2	1.2
Grand Slam	2.0	1.0	2.5	2.0	1.5	1.0
Roundup YR	2.0	1.2	2.2	2.0	1.2	1.0
NCX-9042	2.0	1.2	1.7	1.7	2.0	1.0
NCX-9046	2.0	2.0	2.2	1.7	2.0	1.5
Little Rock	2.7	2.2	1.2	2.0	2.0	1.2
Rio Verde	2.0	2.0	2.0	2.0	2.0	1.2
Hanova	2.7	1.7	2.0	1.0	1.7	1.0
Hitoma	1.7	2.0	2.0	1.5	1.2	1.5
LSD .05	.47	NS	NS	.45	.58	.50

- * Color: 1 = green, 2 = blue-green, 3 = blue, 4 = red
 Uniformity: 1 = good, 2 = fair, 3 = poor
 Plant Size: 1 = small, 2 = medium, 3 = large
 Head Shape: 1 = pointed, 2 = round, 3 = flat
 Uprightness: 1 = upright, 2 = slightly tipped, 3 = very tipped
 Leaf Cover: 1 = good, 2 = fair, 3 = poor

Table 3. Yield and quality characteristics of cabbage cultivars from Processing Observational Trial - 1982.

Cultivar	Source	Harvest Data		Measurements (in)			Firmness*
		Tons/acre	Lbs/head	Core lgth.	Polar diam.	Equatorial diam.	
HYB-N	Harris	34.4	9.86	3.93	8.37	9.50	1.00
9844	Keystone	37.7	8.65	3.43	6.68	8.31	1.75
HYB-6464	Keystone	44.9	7.73	1.93	6.19	9.94	2.00
HYB-1694	Keystone	30.6	7.02	3.56	6.00	7.87	1.00
Krautking	Seedway	31.6	6.79	2.87	7.25	7.56	2.00

* Firmness rating of harvested heads: 1 = firm, 2 = medium, 3 = soft.

Table 4. Quality characteristic ratings of cabbage cultivars from Processing Observational Trial-1982*

Cultivar	Plant Characteristics					
	External color	Uniformity	Plant size	Head shape	Plant uprightness	Leaf cover
HYB-N	2.0	3.0	2.0	2.0	3.0	1.0
9844	2.0	3.0	2.0	2.0	3.0	1.0
HYB-6564	1.0	1.0	1.0	3.0	2.0	1.0
HYB-1604	3.0	3.0	2.0	2.0	2.0	1.0
Krautking	2.0	3.0	2.0	2.0	2.0	1.0

* Color: 1 = green, 2 = blue-green, 3 = blue, 4 = red

Uniformity: 1 = good, 2 = fair, 3 = poor

Plant Size: 1 = small, 2 = medium, 3 = large

Head Shape: 1 = pointed, 2 = round, 3 = flat

Uprightness: 1 = upright, 2 = slightly tipped, 3 = very tipped

Leaf Cover: 1 = good, 2 = fair, 3 = poor

Table 5. Processing quality evaluations of cabbage cultivars, 1982.

Cultivar ^a	pH ^b	T.A. ^c	Comments - Raw Product
King Cole	3.6	1.21	Standard for comparison
HYB-66564	3.5	1.66	Flat head, small buds at base of head, very loose
Rio Verde	3.9	1.30	Flat head, compact head, long crooked core
9844	3.3	1.27	Extremely loose head
Titan 90	4.2	1.35	Loose head, sweet to taste
NCK 9046	3.8	1.33	Sweet, poor tank yield - shrank to 1/3 vol.
Candor	3.5	1.25	Loose head, buds at base
HYB 1694	3.4	0.92	Large core, compact head
Grandslam	3.8	1.01	Small core, loose head
Roundup	4.5	1.19	Sweet, firm head
Little Rock	3.4	1.33	Very firm head, little waste
Hitoma F-1	3.7	1.20	Loose head, sweet .
Kraut Packer	3.5	1.21	Loose at base of head
Hanova	3.5	1.30	Good
Hybrid N	3.5	1.36	Savoyed leaves
Kraut King	3.7	1.12	Small core, large head, sweet
NCX-9042	3.4	1.10	Hugh heads, loose heads, savoyed outer leaves

a The same weight of slaw was used for all cultivars

b pH and T.A. readings were taken after fermentation for 8 weeks

c T.A. was Total Acidity calculated as lactic acid.

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